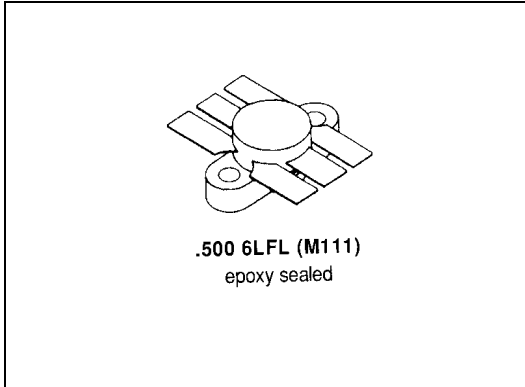


SD1429-03

**RF & MICROWAVE TRANSISTORS
UHF MOBILE APPLICATIONS**

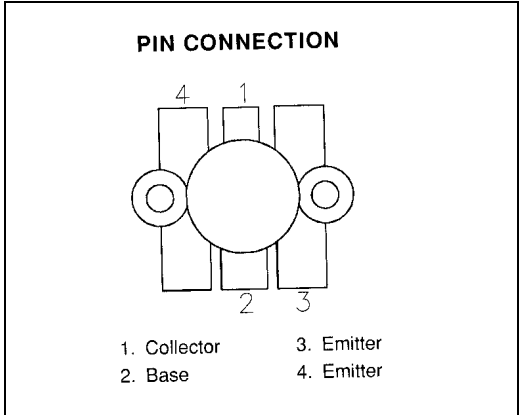
Features

- 470 MHz
- 12.5 VOLTS
- P_{OUT} = 15.0 WATTS
- G_p = 7.5 dB MINIMUM
- COMMON EMITTER CONFIGURATION



DESCRIPTION:

The SD1429-03 is a 12.5V epitaxial silicon NPN planar transistor designed primarily for UHF communications. It withstands infinite VSWR at rated operating conditions.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

| Symbol | Parameter | Value | Unit |
|------------------|---------------------------|-------------|------|
| V _{CBO} | Collector-Base Voltage | 36 | V |
| V _{CEO} | Collector-Emitter Voltage | 16 | V |
| V _{CES} | Collector-Emitter Voltage | 36 | V |
| V _{EBO} | Emitter-Base Voltage | 4.0 | V |
| I _C | Collector Current | 3.4 | W |
| P _{tot} | Total Power Dissipation | 37.5 | A |
| T _J | Junction Temperature | +200 | °C |
| T _{STG} | Storage Temperature | -65 to +150 | °C |

Thermal Data

| | | | |
|----------------------|----------------------------------|-----|------|
| R _{TH(J-C)} | Thermal Resistance Junction-case | 4.6 | °C/W |
|----------------------|----------------------------------|-----|------|

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

| Symbol | Test Conditions | | Value | | | Unit |
|-------------------|-------------------------|------------------------|-------|------|------|------|
| | | | Min. | Typ. | Max. | |
| BV _{CES} | I _C = 50 mA | V _{BE} = 0 mA | 36 | --- | --- | V |
| BV _{CEO} | I _C = 50 mA | I _B = 0 V | 16 | --- | --- | V |
| BV _{EBO} | I _C = 10 mA | I _C = 0 mA | 4.0 | --- | --- | V |
| I _{CES} | V _{CE} = 15 V | V _{BE} = 0 mA | --- | --- | 5 | mA |
| HFE | V _{CE} = 5.0 V | I _C = 500 A | 20 | --- | 200 | --- |

DYNAMIC

| Symbol | Test Conditions | | | Value | | | Unit |
|------------------|-----------------|--------------------------|--------------------------|-------|------|------|------|
| | | | | Min. | Typ. | Max. | |
| P _{OUT} | f = 470 MHz | P _{IN} = 2.65 W | V _{CE} = 12.5 V | 15 | --- | --- | W |
| G _P | f = 470 MHz | P _{IN} = 2.65 W | V _{CE} = 12.5 V | 7.5 | --- | --- | dB |
| C _{OB} | f = 1 MHz | V _{CB} = 12.0 V | | --- | --- | 50.0 | pf |

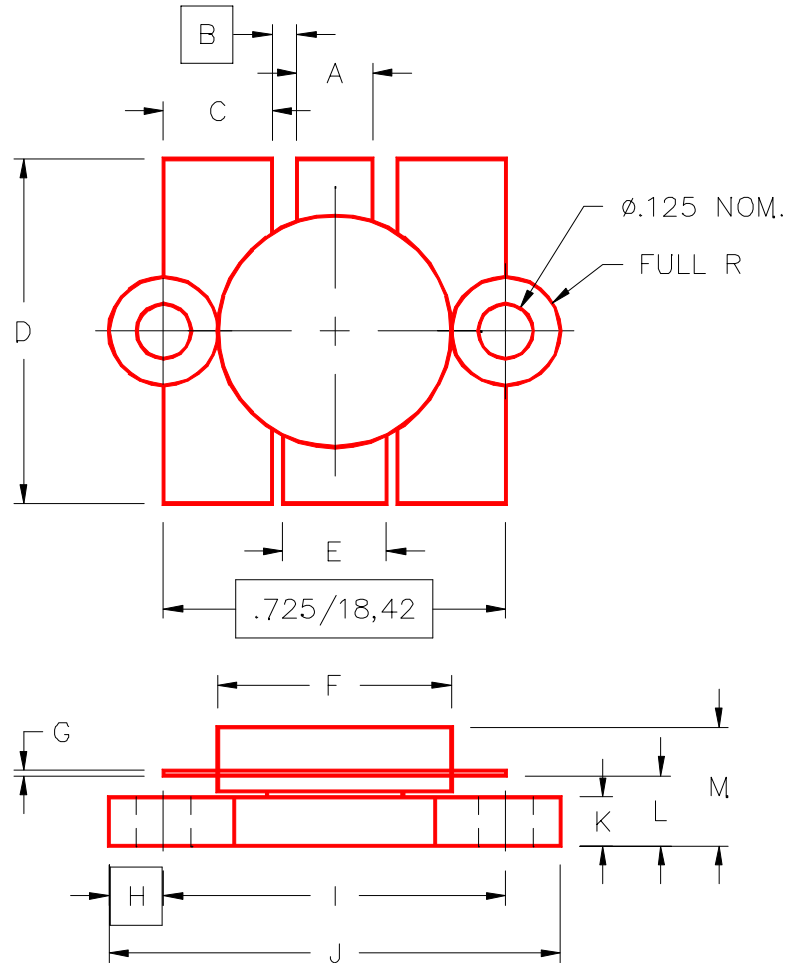
IMPEDANCE DATA

| FREQ | Z _{IN} (Ω) | Z _{CL} (Ω) |
|---------|---------------------|---------------------|
| 450 MHz | 2.9 - j 0.2 | 1.0 + j 1.9 |
| 470 MHz | 2.4 - j 0.9 | 0.90 + j 2.3 |
| 512 MHz | 0.3 + j 0.4 | 0.90 + j 2.3 |

P_{OUT} = 15 W
V_{CE} = 12.5V

PACKAGE MECHANICAL DATA

PACKAGE STYLE M111



| | MINIMUM INCHES/MM | MAXIMUM INCHES/MM | | MINIMUM INCHES/MM | MAXIMUM INCHES/MM |
|---|----------------------|----------------------|---|----------------------|----------------------|
| A | .150/3,43 | .160/4,06 | I | .720/18,29 | .730/18,54 |
| B | .045/1,14 | | J | .970/24,64 | .980/24,89 |
| C | .210/5,33 | .220/5,59 | K | .095/2,41 | .105/2,67 |
| D | .835/21,21 | .865/21,97 | L | .150/3,81 | .170/4,32 |
| E | .200/5,08 | .210/5,33 | M | | .280/7,11 |
| F | .490/12,45 | .510/12,95 | | | |
| G | .003/0,08 | .007/0,18 | | | |
| H | .125/3,18 | | | | |